

E.1 Energy Forms and Transfers

Practice Worksheet — name: _____ date: _____

FORMULAS FOR THIS TOPIC

KINETIC ENERGY $E_k = \frac{1}{2}mv^2$ GRAVITATIONAL POTENTIAL ENERGY $E_p = mgh$

SECTION A — MULTIPLE CHOICE

A1. Which of the following is a form of stored (potential) energy?

- (A) Light energy
- (B) Sound energy
- (C) Chemical energy
- (D) Kinetic energy

A2. An object of mass 2 kg is raised to a height of 5 meters. What is its gravitational potential energy? (Take $g = 9.8 \text{ m/s}^2$)

- (A) 10 J
- (B) 49 J
- (C) 98 J
- (D) 196 J

SECTION B — SHORT ANSWER

B1. State the Law of Conservation of Energy.

B2. Explain the energy transformations that occur when a pendulum swings from its highest point to its lowest point.

ANSWER KEY

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Section A

A1: Chemical energy

A2: 98 J

Section B

B1: Energy cannot be created or destroyed, only transferred from one form to another.

B2: At its highest point, the pendulum has maximum gravitational potential energy and zero kinetic energy. As it swings down, GPE is converted into kinetic energy. At the lowest point, it has maximum kinetic energy and minimum potential energy.